

**EXPLANATION OF CROSS SECTION SYMBOLS:****WATER WELL**

WELL ID NUMBER AND SURFACE ELEVATION  
(SOURCE: J-JOHNSTON; D-DARTON; F-FROELICH)

WELL CASING

% SAND IN 100-FT INTERVAL REPORTED  
BY FROELICH (1985)

WATER LEVEL

WELL SCREEN

BEDROCK SURFACE

REPORTED BEDROCK LITHOLOGY

BOREHOLE IN BEDROCK

BOTTOM ELEVATION

**GEOTECHNICAL BORING SITES**

ID NUMBER AND HIGHEST  
SURFACE ELEVATION

APPROXIMATE LATERAL AND  
VERTICAL EXTENT OF SITE  
ALONG CROSS SECTION LINE

WATER LEVEL

BOTTOM ELEVATION OF  
DEEPEST BORING

**WATER LEVELS REPORTED IN WELLS  
AND GEOTECHNICAL BORINGS**

WATER LEVEL MEASURED IN WELL OR  
CASED GEOTECHNICAL BORING COMPLETED  
IN THE CAMERON VALLEY SAND (LOWER  
AQUIFER OF THE POTOMAC FORMATION)

WATER LEVEL MEASURED IN 1976 FROM  
WELL COMPLETED IN CAMERON VALLEY  
SAND (JOHNSTON AND LARSON, 1977)

WATER LEVEL MEASURED IN WELL OR  
GEOTECHNICAL BORING COMPLETED IN  
OTHER AQUIFERS. MAY REPRESENT A  
COMPOSITE OR AVERAGE WATER LEVEL AT  
GEOTECHNICAL SITES WITH MANY BORINGS

**OTHER SYMBOLS**

47 SURFACE EXPOSURE. SOME EXCAVATIONS  
COINCIDE WITH GEOTECHNICAL BORING SITES

GRAVELLY ZONES IN THE OLD TOWN TERRACE  
REPORTED IN GEOTECHNICAL BORINGS

ORG ORGANIC ZONES REPORTED IN GEOTECHNICAL  
BORINGS FROM THE POTOMAC FORMATION,  
QUATERNARY ALLUVIUM, AND OTHER SEDIMENTS.  
INCLUDES WOOD, PEAT, LIGNITE, LEAVES, DARK  
ORGANIC SILT, AND OTHER ORGANIC MATERIAL

MOUNT IDA INTERSECTION WITH ANOTHER CROSS SECTION.  
CROSS SECTIONS ARE DISTINGUISHED BY NAME  
AND COLOR-CODED SECTION LINES AND TITLES

**GEOLOGIC CROSS SECTION 2E– FOUR MILE RUN**

Cross section 2E follows Four Mile Run Valley downstream from Barcroft Park, in southern Arlington County, to the extreme northern end of Potomac Yards, near George Washington Memorial Parkway and the Potomac River. The section begins at the lowest bedrock outcrop on Four Mile Run, and traces the regular eastward slope of the bedrock surface and the corresponding thickening of the Potomac Formation and younger alluvial sediments. The view is northward along the section line, which locally bends to take in the locations of nearby geotechnical boring sites, historical water wells, and other places of interest (e.g., Reservoir Woods, Hume Spring). These features, and other sites of cultural, historical, and environmental interest, are indicated by labels and symbols along the

cross section. The specific location of the cross section is indicated on Plate 1 by a blue section line.

The cross sections are intended to be used together with the geologic maps, particularly Plate 5, to illustrate the third dimension of the map units. Contacts between map units are approximately located and, in the Potomac Formation, are typically gradational or transitional. The abundance of control points (surface exposures, wells, geotechnical sites) along the cross section provides a general indication of the reliability of contact locations. Map units are depicted using the same colors, patterns, and labels as on Plate 5, and the explanation of map units on Plate 5 serves as the legend. The section also depicts some bedrock units and several gravelly zones

and organic horizons in the Old Town terrace that are present only in the subsurface and thus do not appear on Plate 5.

The dominant physiographic feature is the deeply entrenched valley of Four Mile Run, which is flanked by many large terraces. Some of these terraces are graded to the massive Old Town terrace, which occupies the eastern part of the section.

The Four Mile Run section depicts the array of terraces and other Quaternary deposits that flank Four Mile Run, as well as the sizable body of estuarine sediment at its mouth, most of which is now buried beneath artificial fill. The section also illustrates some of the internal architecture of the northern end of the Old Town terrace, including the

impressive buried escarpment below Lynhaven (site GT-117), which appears to separate older and more deeply entrenched terrace sediments to the east from thinner and presumably younger terrace deposits to the west. The two prominent organic horizons reported in the borings at site GT-117 are suggestive of major periods of non deposition and weathering(?), accompanied by long-term growth of vegetation. The deep channel below this site may be the same as or connect with the deep channel seen much further to the south below Old Town, although a direct connection cannot be established from existing data. The substantial thickness of the Cameron Valley sand member (Kpcs - Kpcv) at the base of the Potomac Formation in this section is likely related to its location near the thalweg of the Four Mile Run bedrock valley (see Plate 3 and its expanded explanation).